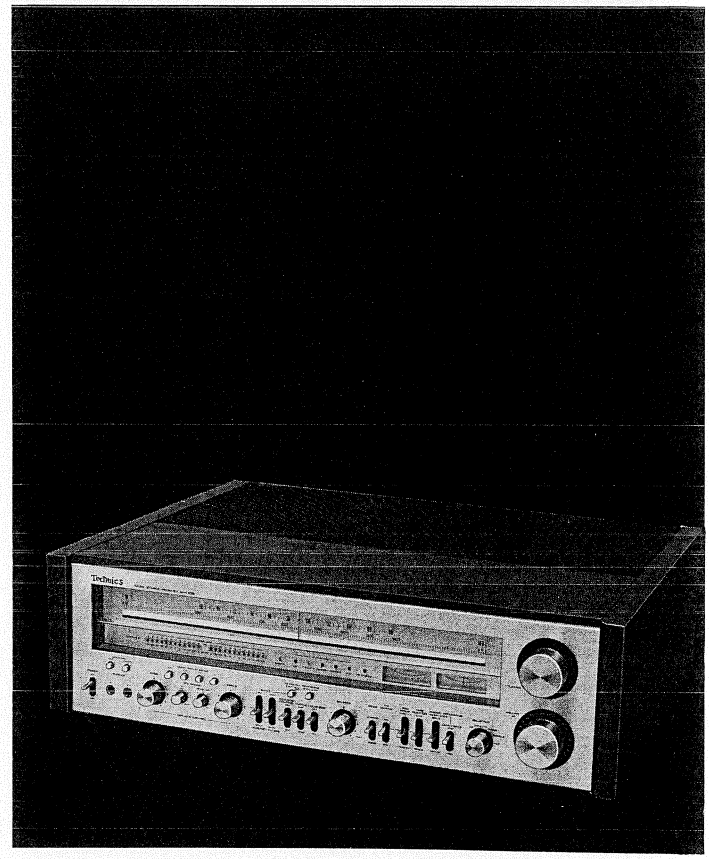
Technics

FM/AM STEREO RECEIVER

SA-1000
SA-1000A

OPERATING INSTRUCTIONS



SA-1000A is different in appearance and colour-tone.

Before operating this unit, please read these instructions completely.

Dear Stereo Fan

Your new "Technics" FM/AM stereo receiver was manufactured and assembled under exacting quality control standards.
The incorporation of the latest advances in design and the use of the most modern components assure outstanding performance with superb sensitivity and tonal quality.
A few minutes of your time, wisely spent reading carefully through this instruction booklet will assure you of getting the maximum benefit of this fine component's potential.

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ACCESSORIES

- FM indoor antenna (feeder antenna) 1
- 75Ω↔300Ω impedance conversion plug 1
- F-type plug for 75Ω coaxial cable (5C-2V) 1
- F-type plug for 75Ω coaxial cable (3C-2V) 1
- Ring for 75Ω coaxial cable (5C-2V) 1
- Ring for 75Ω coaxial cable (3C-2V) 1
- Screw-driver (for tightening the speaker terminal and voltage selector cover screws) 1

PRODUCT SERVICE

WARNING CONCERNING REMOVAL OF COVERS

This unit should be serviced by qualified technicians only. No service information is provided for customers.
Should your "Technics" product ever require servicing, refer to the Directory of Authorized Service Centers or your franchised "Technics" dealer for detailed instructions.

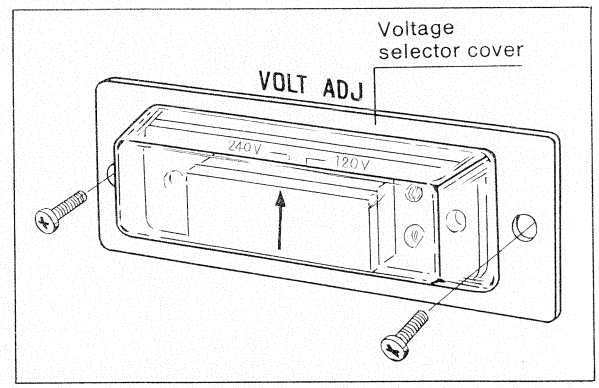
LOCATION OF SERIAL NUMBER

You will find the serial number located at the back of the unit.

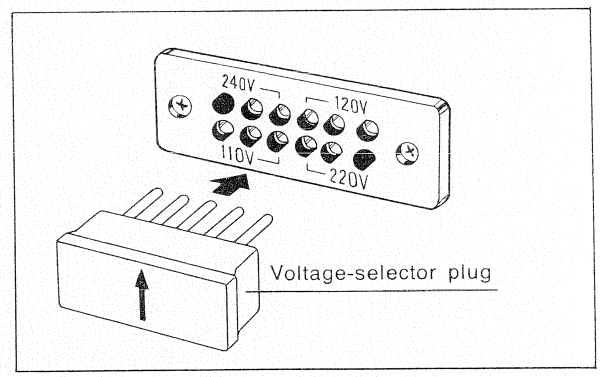
BEFORE OPERATION

This unit includes a built-in voltage selector.
The voltage selector must be correctly set to local voltage. If not, this unit will be seriously damaged.

1) Disconnect power cord from AC outlet.
2) Using the included screw-driver, remove the 2 screws holding the cover, and remove the cover.



3) Align the arrow of the voltage-selector plug with local voltage indication, and connect to voltage selector.



4) Attach the cover.

MAINTENANCE OF EXTERNAL SURFACES

- To clean, use a soft, dry cloth. If the surfaces are extremely dirty, use a soft cloth soaked in a detergent (such as used for washing dishes; diluted to 1/5 or 1/6 strength), and then wring the cloth well. Wipe once again with a soft, dry cloth.
- Never use chemicals such as alcohol, paint thinner and benzine, nor a chemically-treated cloth to clean this unit because the finish may be damaged or lose its luster.

FOR LONG AND SAFE USE OF THIS UNIT

1) USE AN ORDINARY HOUSEHOLD AC POWER SOURCE

■ **Use from an AC power source of high voltage, such as for air conditioners, is very dangerous.**

Be extremely careful not to make a connection to the electrical outlet for a large air conditioner or central-heating unit which uses high voltage, because there is the possibility of fire.

■ **A DC power source cannot be used.**

Be sure to check the power source carefully, especially on a ship or other place where DC is used.

2) CONNECTION AND DISCONNECTION OF THE POWER CORD PLUG

■ **Wet hands are dangerous.**

A dangerous electric shock may result if the plug is touched by wet hands.

■ **Don't pull the power cord.**

Always grasp the plug; never pull the cord itself.

3) AC OUTLETS ON REAR PANEL

■ **Any equipment connected here should have specified power consumption or less.**

These outlets are exclusively for the connection of other audio equipment, such as a tape deck. Be sure the power consumption of each does not exceed wattage specified near the AC outlets.

■ **Never connect other electrical appliances such as an iron or toaster.**

If appliances with a large power consumption are connected, an unexpected accident might occur as a result of overheating.

4) NEVER ATTEMPT TO REPAIR OR RECONSTRUCT THIS UNIT

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidently touched.

5) FOR FAMILIES WITH CHILDREN

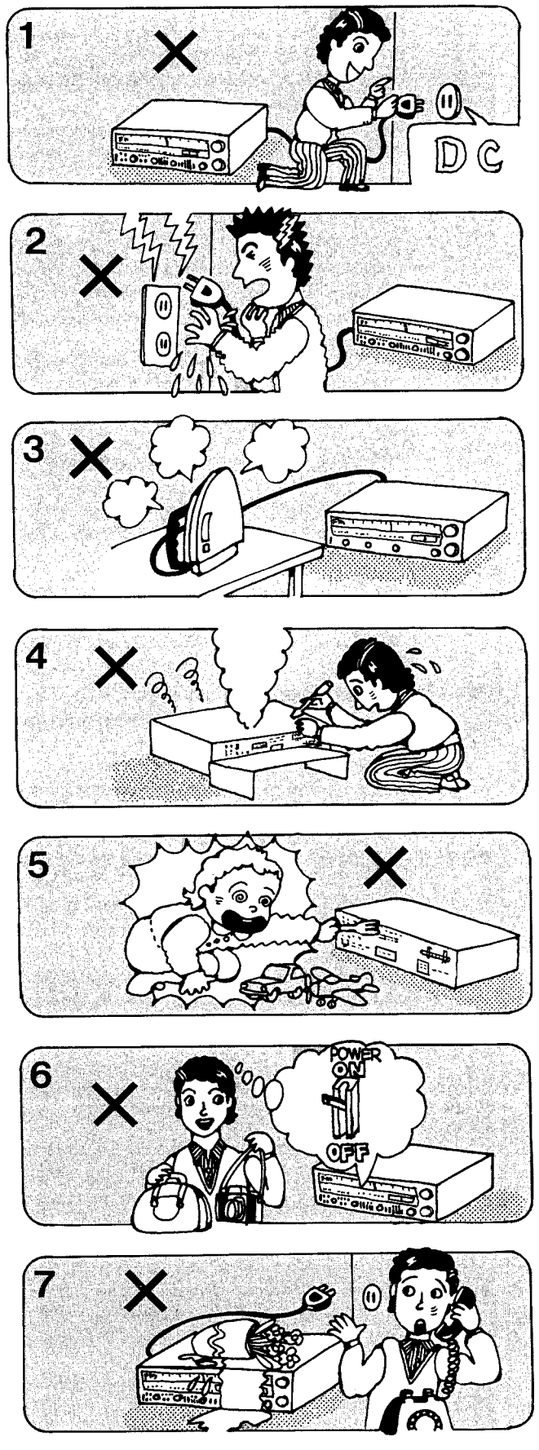
Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

6) TURN OFF AFTER USE

If the unit is left for a long time with the power on, this will not only shorten its useful operation life, but may also cause other unexpected trouble.

7) IF WATER IS SPILLED ON THE UNIT

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.



8) PLACE THE UNIT WHERE IT WILL BE WELL VENTILATED, AND AWAY FROM DIRECT SUNLIGHT

Place this unit at least 10 cm (4") away from wall surfaces, etc., and away from direct sunlight. Be careful that curtains and similar materials do not obstruct the ventilation holes.

9) KEEP THE UNIT AWAY FROM STOVES, ETC.

Heat can damage the external surfaces as well as internal circuits and components.

10) AVOID SPRAY-TYPE INSECTICIDES

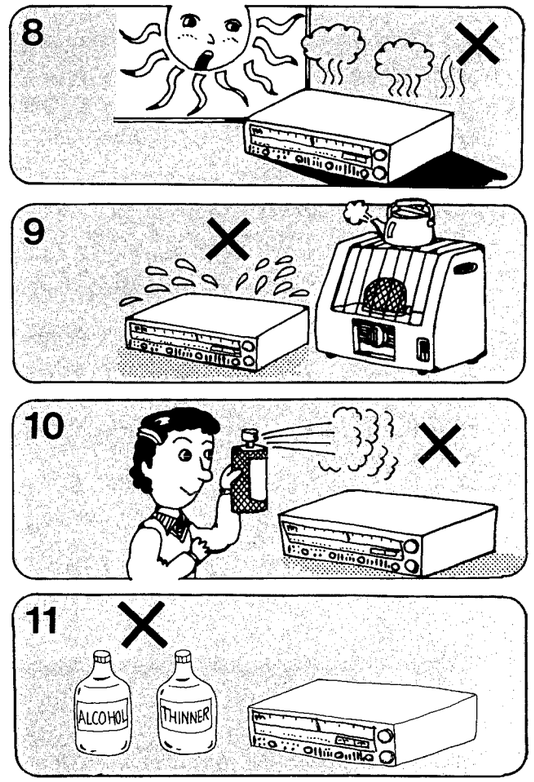
Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

11) NEVER USE ALCOHOL OR PAINT THINNER

These and similar chemicals should never be used, because they may damage the finish.

IF TROUBLE OCCURS

If, during operation, the sound is interrupted or indication lamps no longer illuminate, or if abnormal odor or smoke is detected, immediately disconnect the power cord plug, and contact your dealer or an Authorized Service Center.



DESCRIPTION OF THE AUTOMATIC SPEAKER-IMPEDANCE-COMPARATOR CIRCUITRY

1) This unit employs unique automatic speaker-impedance-comparator circuitry to deliver optimum amplifier-power output at the following recommended speaker loads.
   - MAIN or REMOTE: 4 ohms or greater
   - MAIN + REMOTE: 8 ohms or greater
2) Only one set of speakers should be connected to each speaker terminal at one time, and external accessories such as a switching device, monitors, etc. should not be connected as this will defeat the function of the circuit, causing possible fire or electric shock due to excessive temperature.
3) During initial set-up or when changing speakers, be sure to set the speaker selectors② or power switch① to the "OFF" position first and then make the necessary connections. Check for proper polarity and then set the speaker selectors② or power switch① to the "ON" position. It is important that this sequence be observed for the proper operation of the automatic speaker-impedance-comparator circuitry.

IF THE "SAFETY" INDICATOR IS NOT ILLUMINATED

If an abnormal condition is detected in the output circuitry, the protection circuitry will function, and this indicator will no longer illuminate. If this occurs, turn off the power switch①, and check to determine the trouble, as described below.

Release the speaker selectors② to the off position (▬ ⋯ ▬), and turn on the power switch①.

1) If the indicator then illuminates

The problem is not in this unit.

Check for probable causes, such as a shorted plus (⊕) and minus (⊖) speaker connection terminals or improper impedance of the speaker systems.

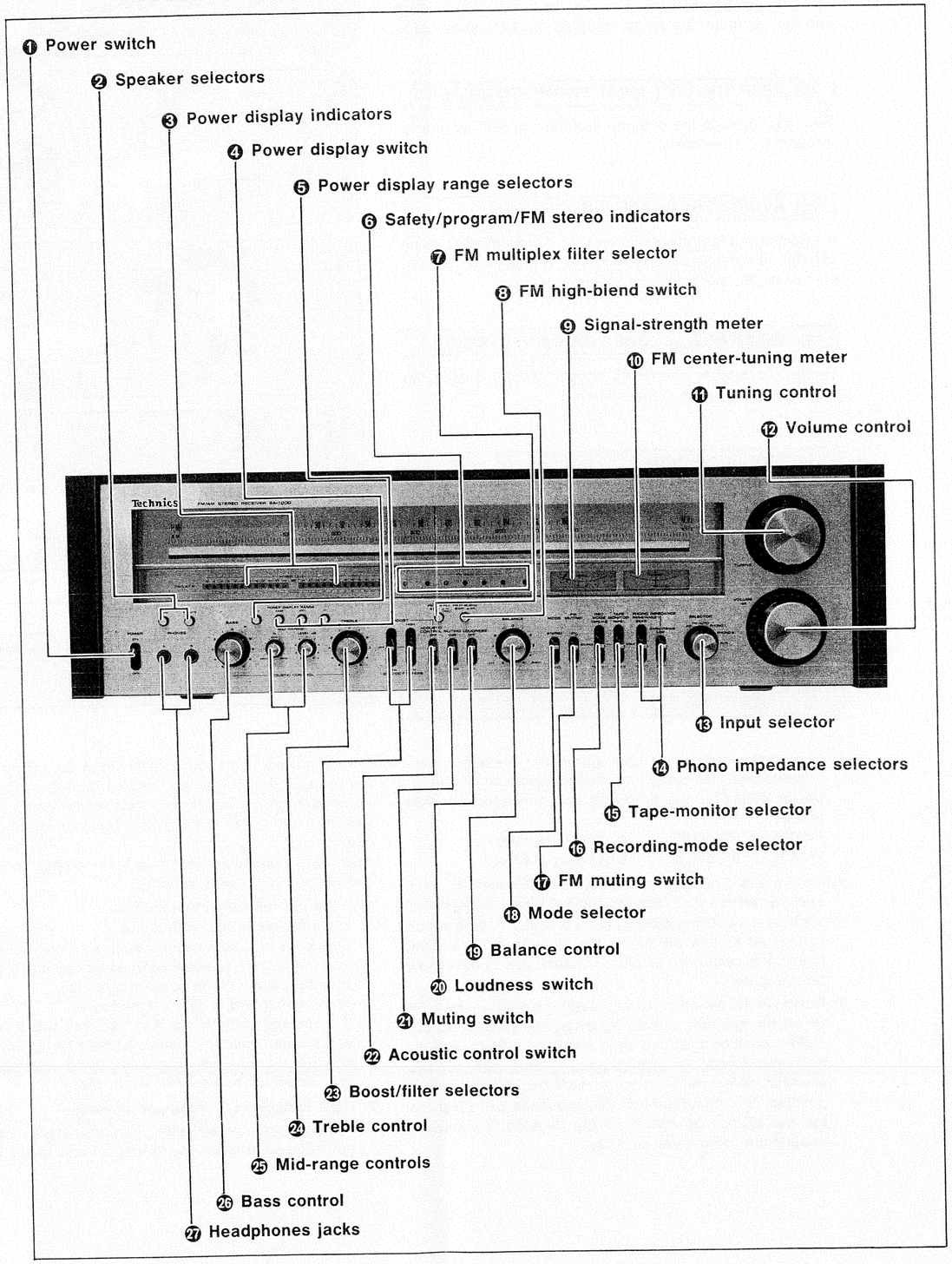
Note concerning speaker impedance:

If main and remote speaker systems are used at the same time, their impedance should be 8Ω or more. If only the main or the remote are to be used separately, their impedance should be 4Ω or more.

2) If the indicator still does not illuminate

The problem is in this unit. Turn off the power switch①, and request your dealer to inspect and repair it.

FRONT PANEL CONTROLS AND THEIR FUNCTIONS



❶ Power switch

Note:

Speakers may be damaged if connection cords to a record player, tape deck, etc. are connected or disconnected with power switch on.

❷ Speaker selectors

For selection of speaker systems connected to "MAIN" or "REMOTE" terminals on rear panel. Push button inward (▬) to select the desired speaker system

❸ Power display indicators

These are indicators which electronically show the peak output level of this unit with an extremely fast response time.

These indicators can be used to watch continuous signal changes, such as in music signals.

If the impedance of the speaker systems is 8 ohms, the indicators show the actual standard value; if the impedance is 16 ohms, the actual value is one-half of that shown; and, if the impedance is 4 ohms, the actual value is twice the indicated value.

If main and remote speaker systems are used at the same time, impedance will change according to the following equation:

$$\text{Total impedance} = \frac{R_1 R_2}{R_1 + R_2}$$

Where: R_1 = impedance of main speakers.
R_2 = impedance of remote speakers

Consequently, total impedance is 4 ohms if 8-ohm speakers are connected to both the "MAIN" and the "REMOTE" terminals.

Note:

In the figure above the power indicators, 0 dB = 330 W. If the "X0.1" power display range selector ⑤ is pushed, 0 dB = 33 W; and, if the "X0.01" is pushed, 0 dB = 3.3 W.

❹ Power display switch

This switch is used to turn the power display indicators ③ on and off.

❺ Power display range selectors

This selector is used to select the sensitivity of the power display indicators ③.

When the output is small and the illuminated range of the power display indicators is small, push the "X0.1" or "X0.01" selector, so that the indicated value will be, respectively, 10 or 100 times the actual value.

❻ Safety/program/FM stereo indicators

SAFETY:

Usually remains indicated; not illuminated if an abnormal condition in output circuitry is detected. (If not illuminated, refer to page 3.)

PROGRAM:

When the program source is selected by the input selector ⑬, the one of these indicators which corresponds to the selected program source will also illuminate.

FM STEREO:

This indicator automatically illuminates when an FM stereo broadcast is being received. (When the mode selector ⑱ is set to "MONO" position the indication does not illuminate.)

❼ FM multiplex filter selector

Usually leave this selector set to the "OUT" position. Set it to the "IN (REC)" position (▬) if "beat" noise is heard from the tape deck (when recording an FM stereo broadcast to a tape deck which has low-frequency recording bias).

When set to the "IN (REC)" position, the "beat" sound generated by the 38-kHz sub-carrier signal of the FM broadcast and the recording bias of the tape deck will be eliminated.

❽ FM high-blend switch

Set to the "ON" position (▬) if the noise in the high-sound range is excessive when listening to an FM stereo broadcast.

When this switch is set to the "ON" position, the noise in the high range, which is comparatively more annoying, is mixed in the left and right channels without acoustically disturbing the stereo feeling, and the noise is reduced.

❾ Signal-strength meter

This meter shows the strength of the antenna input level. The point of best reception for both FM and AM is where the indication is farthest to the right.

❿ FM center-tuning meter

This meter indicates the optimum tuning point for best reception, with least distortion, of stereo broadcasts. After tuning by referring to the signal-strength meter ⑨, adjust the tuned position so that the indication needle of this meter is at the center position.

Note that this meter will also indicate the center position when the broadcast is completely detuned.

⓫ Tuning control

Tune to the desired broadcast while referring to the signal-strength meter ⑨ and the FM center-tuning meter ⑩.

⓬ Volume control

This control is used to adjust the volume level.

Note:

Be sure to set this control to the "∞" position when turning on the power, otherwise the speakers may be damaged.

⓭ Input selector

AM:

Set to this position for reception of AM broadcasts.

FM AUTO:

Set to this position for reception of FM broadcasts.

PHONO 1:

Set to this position to listen to the record player connected to the "PHONO 1" terminals.

PHONO 2:

Set to this position to listen to the record player connected to the "PHONO 2" terminals.

AUX:

Set to this position to use equipment connected to the auxiliary input terminals ("AUX") on the rear panel of this unit.

⓮ Phono impedance selectors

These selectors are used for selection of the input impedance of the "PHONO 1" and "PHONO 2" terminals. The "RESISTANCE" selector is for selection of the resistance, and the "CAPACITANCE" selector for selection of the capacitance.

In general, the characteristic of a moving-magnet cartridge "droops" in the center, as shown in the figure below, and has a resonance peak in the high-frequency range. When the load impedance (resistance and capacitance) is changed, it is possible to change the height and center position (resonance frequency) of this resonance peak, thus making delicate changes in the tone quality.

Ordinary use is as described below, but other settings can be made for variation of the enjoyment of listening to music.

■ Input capacitance selector (CAPACITANCE)

LOW:

The position for ordinary use.

HIGH:

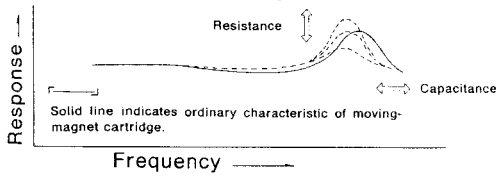
Compared to the "LOW" position, the resonant frequency moves downward, and mid-range and high-range frequency response can be varied.

■ **Input resistance selector (RESISTANCE)**

Set to the value which most nearly corresponds to the specified resistance of the cartridge to be used. (Refer to the cartridge operation instructions.)

Note that most cartridges can be used at the "50 kΩ" position. Setting to the high value (100 kΩ) results in an over-emphasis of the high range, and setting to the low value (25 kΩ) results in a decrease of the high range.

Changes Resulting From Load Differences



⑮ Tape-monitor selector

TAPE 1:

Set to this position to playback or monitor the sound from tape deck 1.

SOURCE:

Set to this position to listen to phono discs or radio broadcasts, or to listen to equipment connected to the auxiliary-input terminals ("AUX") on the rear panel of this unit.

TAPE 2:

Set to this position to playback or monitor the sound from tape deck 2.

Note:

Refer to page 9 for detailed information concerning tape monitoring.

⑯ Recording-mode selector

TAPE 1▶2:

Set to this position for recording from tape deck 1 to tape deck 2.

SOURCE:

Set to this position for recording phono disc sound or radio broadcasts to tape deck 1 and/or tape deck 2.

TAPE 2▶1:

Set to this position for recording from tape deck 2 to tape deck 1.

⑰ FM muting switch

Set this switch to the "ON" position to eliminate the characteristic noise between stations when tuning to an FM broadcast.

In an area where reception is poor because signal strength is weak, such as in mountainous regions, the broadcast signal might also be eliminated (at the "ON" position). If so, set this switch to the "OFF" position for reception. Between-station noise might be heard at the "OFF" position, however, so the volume level should be reduced when tuning to the broadcast.

⑱ Mode selector

STEREO:

Set to this position to listen in stereo.

MONO:

Set to this position to listen monaurally. The left and right sounds will be mixed, and the same sounds will be heard from both speakers. Set to this position to listen to an FM stereo broadcast which is very noisy.

⑲ Balance control

To balance the left and right volume level, set the mode selector⑱ to the "MONO" position, and use this control to balance the sound so that is seems to be heard from the position half way between the speakers.

⑳ Loudness switch

It is usually difficult for human ears to clearly hear low-range sound when the volume level is low.

When listening at a low volume level, therefore, this switch can be set to the "ON" position to compensate for this, making sound more dynamic and powerful.

㉑ Muting switch

When this switch is set to the "−20 dB" position, the output level will be reduced to 1/10th, making it useful for temporary reduction of the volume level, without disturbing the setting of the volume control, such as when changing discs, etc. It is also possible, when listening at a low volume level, to set it to the "−20 dB" position and thereby make more delicate adjustments of the volume level than at the "0 dB" position.

㉒ Acoustic control switch

This is the switch used to turn on and off the adjustment function of the tone controls㉔,㉕,㉖ and the boost/filter selectors㉓.

When this switch is set to the "OFF" position, characteristics are "flat" regardless of the settings of these controls, and they will not function.

Note:

This switch does not affect the filter function of the boost/filter selectors㉓ at either position.

㉓ Boost/filter selectors

These selectors can be used to select the characteristics of change of the low-sound range and high-sound range adjusted by using the tone controls㉔,㉖. These selectors function only when the acoustic control switch㉒ is on.

BOOST:

When the "LOW" switch is set to the "BOOST" position, low-range sound is emphasized ("boosted") in the 100 Hz range. When the "HIGH" switch is set to the "BOOST" position, high-range sound is emphasized in the 10 kHz range. The amount of actual emphasis will differ depending upon the settings of the bass and treble tone controls㉔, ㉖, but the maximum level of the emphasized range will be the same as when the tone controls㉔,㉖ are set to their maximum position (+5). When listening to music with a strong beat, such as rock, set both switches ("LOW" and "HIGH") to this position.

OFF:

When the switches are set to this position, the boost and filter functions are turned off.

FILTER:

When the "LOW" switch is set to the "FILTER" position, low-range sound of 30 Hz and lower is cut.

When the "HIGH" switch is set to the "FILTER" position, high-range sound of 8 kHz and higher is cut.

Set the "LOW" switch to this position to eliminate low-range noises such as motor rumble, and set the "HIGH" switch to this position to eliminate high-range noises such as tape "hiss" noise, etc.

㉔ Treble control

High-range sound can be emphasized by turning this control clockwise.

㉕ Mid-range controls

■ **Center-frequency control (f_0)**

This control can be used for variation of the center frequency within a range of 250 Hz to 5 kHz.

■ **Band-level control**

This control can be used to amplify or attenuate the frequency band adjusted by the center-frequency control. For additional details, refer to the section "ACOUSTIC CONTROLS" on page 10.

㉖ Bass control

Low-range sound can emphasized by turning this control clockwise.

㉗ Headphones jacks

For connection of 2 sets of headphones.

Note:

Tape deck 1 is the tape deck connected to the tape deck 1 terminals ("TAPE 1") on the rear panel of this unit.

ANTENNAS

For additional information, refer to the separate instruction sheet.

FM ANTENNA

For best reception of FM broadcasts, select an FM antenna with the best characteristics for the area in which the unit is to be used.

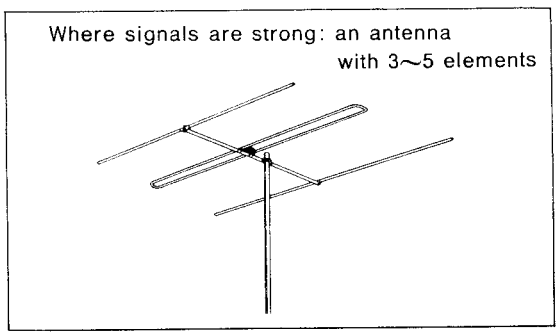
■ Included antenna

The included antenna is easy to install and is suggested for use until a permanent antenna is installed especially for FM. An antenna especially for FM should be installed in order to obtain the best reception characteristics of which this unit is capable.

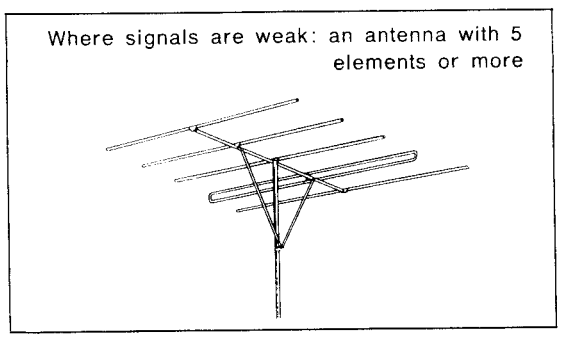
■ Antenna exclusively for FM reception

1) Selection

1. In areas where very strong broadcast signals are received (where the transmitting antenna can be seen), use an outside antenna with 3~5 elements.



2. In areas where weak broadcast signals are received (in mountainous regions or between tall buildings), use an outside antenna with 5 elements or more.



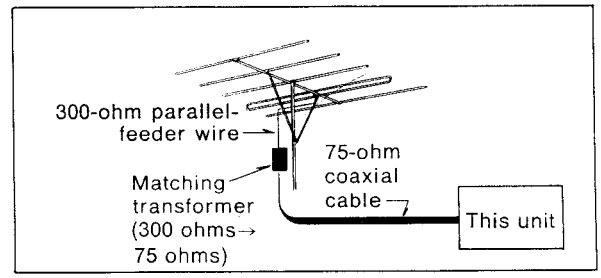
Note:
Consult with your dealer for detailed advice concerning the number of elements the antenna should have.

2) Connection wire from the antenna

To obtain the best performance of which this unit is capable, the cable used to connect this unit with the special antenna for FM reception should be 75-ohm coaxial cable (type 5C-2V or 3C-2V) which resists the effects of external noise.

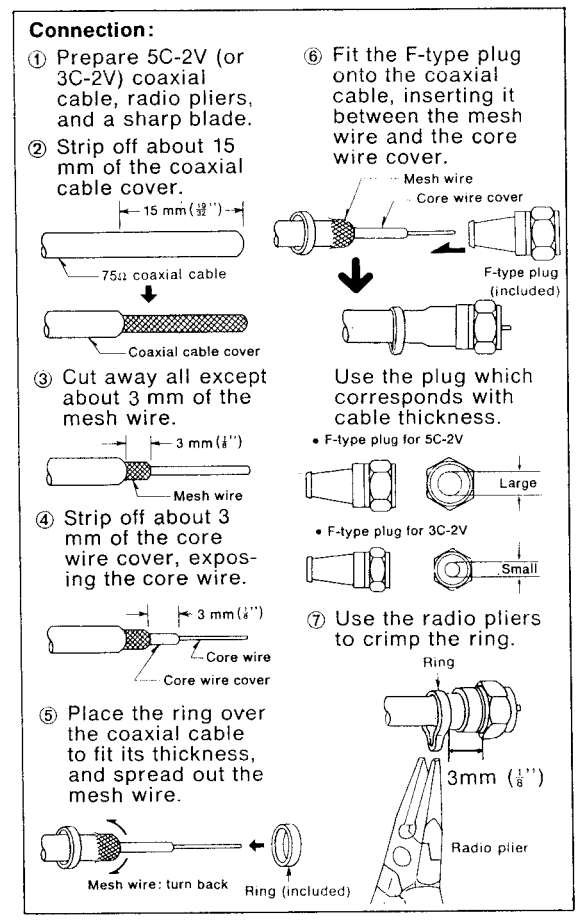
3) Impedance matching

If it is impossible to make a direct connection with 75-ohm coaxial cable from the antenna, a matching transformer should be installed, as close to the antenna itself as possible.

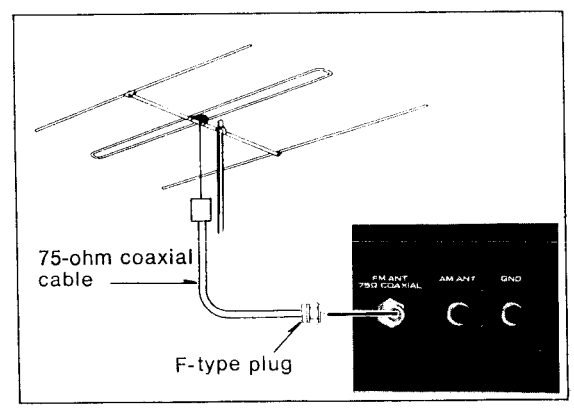


4) Connection

1. Prepare the 75-ohm coaxial cable.


Connection:
① Prepare 5C-2V (or 3C-2V) coaxial cable, radio pliers, and a sharp blade.
② Strip off about 15 mm of the coaxial cable cover.
15 mm (19/32")
75Ω coaxial cable
Coaxial cable cover
③ Cut away all except about 3 mm of the mesh wire.
3 mm (1/8")
Mesh wire
④ Strip off about 3 mm of the core wire cover, exposing the core wire.
3 mm (1/8")
Core wire
Core wire cover
⑤ Place the ring over the coaxial cable to fit its thickness, and spread out the mesh wire.
Mesh wire: turn back
Ring (included)
⑥ Fit the F-type plug onto the coaxial cable, inserting it between the mesh wire and the core wire cover.
Mesh wire
Core wire cover
F-type plug (included)
Use the plug which corresponds with cable thickness.
• F-type plug for 5C-2V
Large
• F-type plug for 3C-2V
Small
⑦ Use the radio pliers to crimp the ring.
Ring
3mm (1/8")
Radio plier

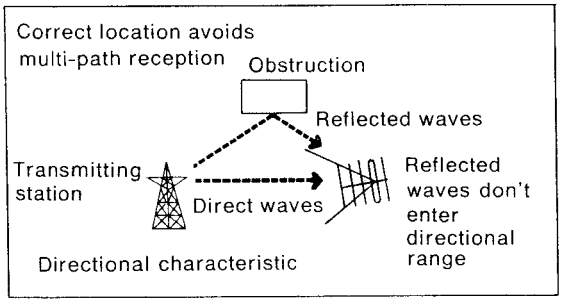
2. Connect the 75-ohm coaxial cable to the "FM ANT 75-ohm COAXIAL" terminal of this unit.



5) Location of antenna

Install the antenna:

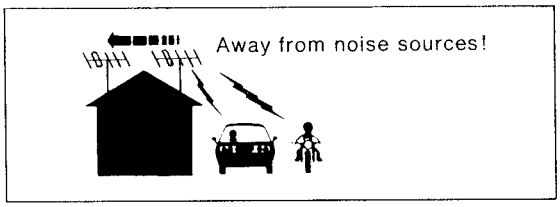
1. Where it will receive FM broadcast signals directly; not in the "shadow" of a building.



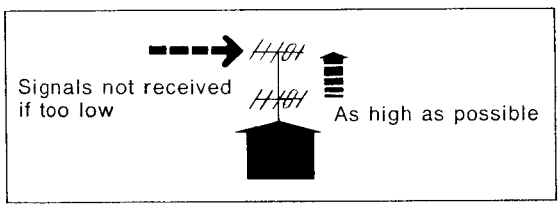
Note:

Multi-path reception is the distortion which results from the reception of two types of signals: those reflected from nearby buildings, mountains, etc., and those received directly from the broadcasting station.

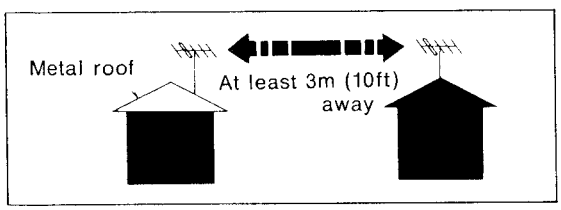
2. Away from busy roads, and away from neon signs.



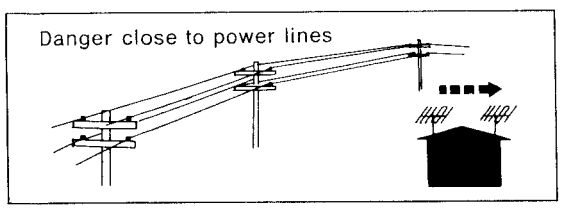
3. At least 4 meters (12 feet) above the ground (except in mountainous regions, etc.).



4. At least 3 meters (10 feet) away from a metal roof or other antennas.



5. To avoid danger, away from electric power lines.



AM ANTENNA

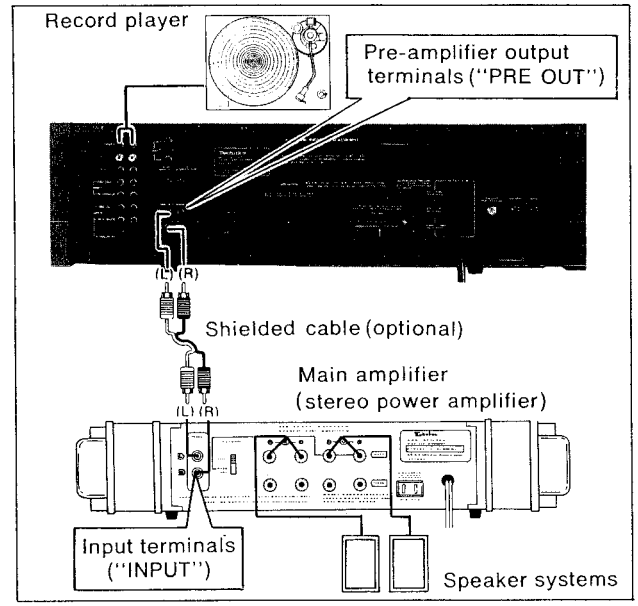
If an outside AM antenna is installed (in mountainous regions or between reinforced-concrete buildings), install it in a location away from utility poles, high-voltage power lines, high buildings and busy roads.

THE PRE OUT/MAIN IN TERMINALS

These terminals are used when this unit is to be used independently as a pre-amplifier or as a main amplifier.

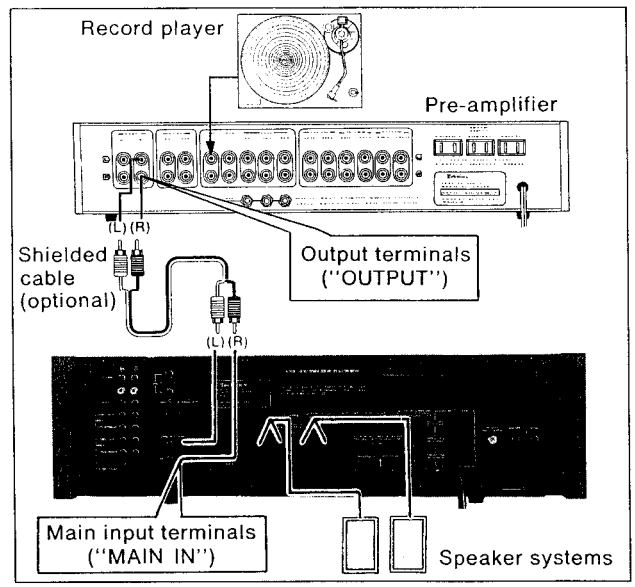
TO USE THIS UNIT AS A PRE-AMPLIFIER

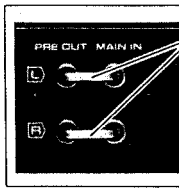
Connect the pre-amplifier output terminals ("PRE OUT") of this unit with the input terminals ("INPUT") of the main amplifier, using shielded cable to make the connection.



TO USE THIS UNIT AS A MAIN AMPLIFIER

Connect the main input terminals ("MAIN IN") of this unit with the output terminals ("OUTPUT") of the pre-amplifier, using shielded cable to make the connection.





Connection pins:
Remove only when this unit is used as a pre-amplifier or main amplifier.
Be sure the power switch① is "OFF" before removing the connection pins.

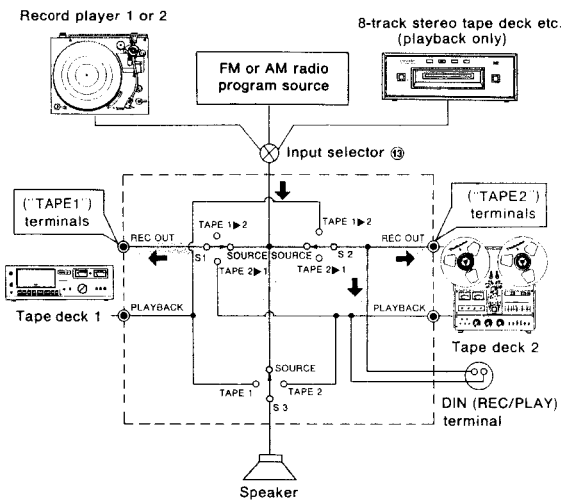
TAPE RECORDING AND TAPE-TO-TAPE RECORDING

TAPE RECORDING

When the recording-mode selector⑯ is set to the "SOURCE" position, the signal source selected by the input selector⑬ is emitted from the tape deck 1 and 2 recording output terminals ("REC OUT").

1) Set the recording-mode selector⑯ to the "SOURCE" position.
2) Set the input selector⑬ to the position corresponding to the program source to be recorded.
3) Adjust the recording level of the tape deck, and begin the recording.

To record to tape deck 1 or 2, or to both simultaneously



Notes: S 1~S2 Recording-mode selector ⑯
S 3 Tape-monitor selector ⑮

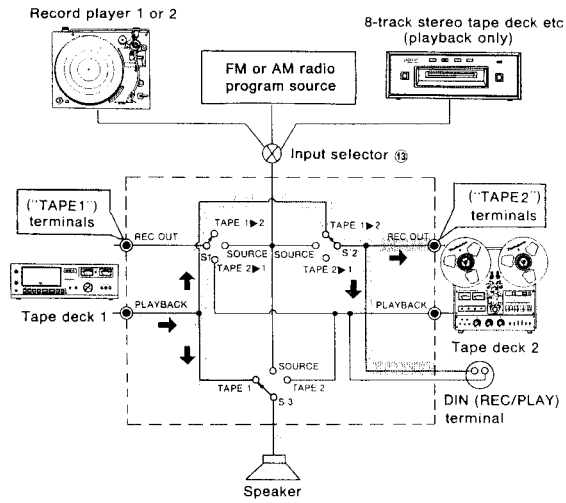
TAPE-TO-TAPE RECORDING

If two tape decks are connected, recordings can be made from one deck to the other.

■ To record from tape deck 1 to 2, or from 2 to 1:

1) Set the recording-mode selector⑯ to the "TAPE 1▶2" position.
(To record from tape deck 2 to tape deck 1, set the recording-mode selector⑯ to the "TAPE 2▶1" position.)
2) Prepare tape deck 1 (or tape deck 2) for playback, and tape deck 2 (or tape deck 1) for recording, and begin the tape-to-tape recording.

To record from tape deck 1 to 2



Notes: S 1~S2 Recording-mode selector ⑯
S 3 Tape-monitor selector ⑮

■ To listen to phono discs or a radio broadcast while recording from tape to tape:

By setting the tape-monitor selector⑮ to the "SOURCE" position, it is possible to listen to phono discs or a radio broadcast while recording from tape to tape.

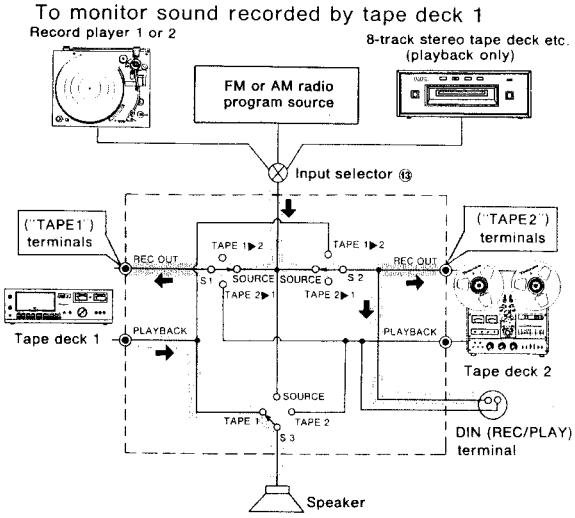
TAPE MONITORING

If the tape deck to be used is the three-head type, tape monitoring is a method to listen to, and thus confirm, the material being recorded.

When the tape-monitor selector⑮ is set to the "SOURCE" position, the incoming sound can be heard immediately prior to recording. When it is set to the "TAPE 1" or "TAPE 2" position, the sound can be heard immediately after it is recorded.

Use the tape-monitor selector⑮, therefore, to confirm that the source sound is being recorded correctly, by switching back and forth between the "SOURCE" position and the "TAPE 1" or "TAPE 2" position.

Tape monitoring (if the tape deck has 3 heads):
To monitor sound recorded by tape deck 1



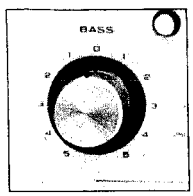
Notes: 1. S 1~S2 Recording-mode selector ⑯
S 3 Tape-monitor selector ⑮
2. Tape deck 2 sound can be monitored by setting S3 to "TAPE 2" position.

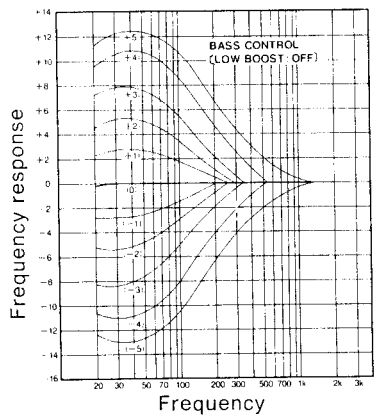
ACOUSTIC CONTROLS

This unit includes separate controls for independent adjustment of treble, mid-range and bass sound, and also includes boost/filter selectors㉓ for immediate amplification or "cut" of bass and treble sound.
In particular, the center-frequency control㉕ and the band-level control㉕ can be used in combination for continuous variation, at a level of ±8 dB, of the center frequency within a range of 250 Hz to 5 kHz. This means that it is possible, to some extent, to make correction of a "peak" or "dip" in the mid-range of the frequency response of the equipment being used (speakers or phono cartridge, for example), or to emphasize only a singer, or to emphasize only the mid-range of sound.
Although the standard setting position for each control (treble, mid-range and bass) is the center position, it is possible to make variations (emphasis or attenuation) of each in accordance with listening room conditions (arrangement of furniture, wall covering, floor covering, etc.) and with personal preference. To do so, set the acoustic control switch㉒ to the "ON" position, and then make the adjustments as desired.

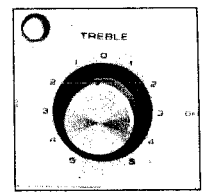
CHARACTERISTICS OF CHANGE: TONE CONTROLS ㉔, ㉕, ㉖

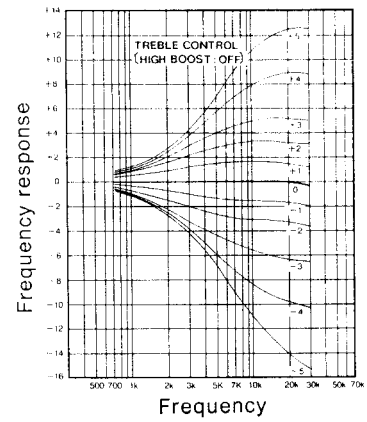
1) Bass control ㉖



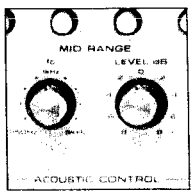


3) Treble control ㉔

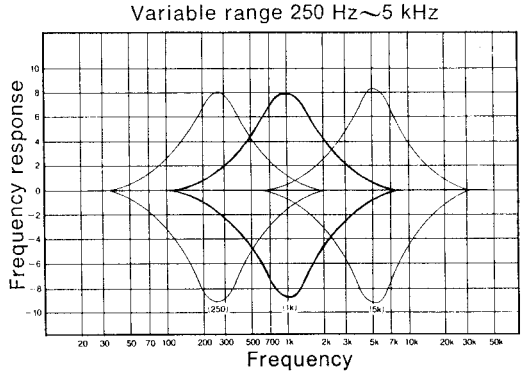


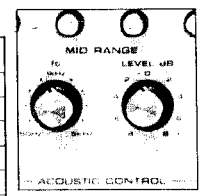


2) Mid-range controls ㉕

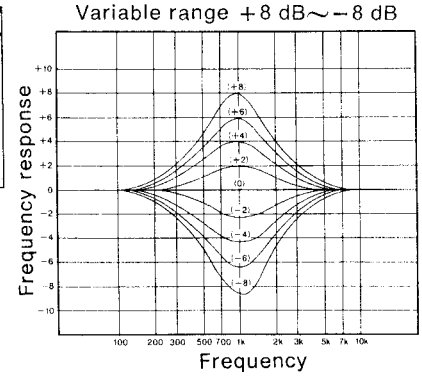


fo:
Variable range 250 Hz～5 kHz



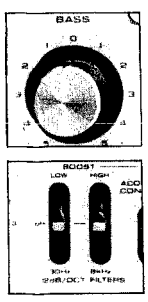


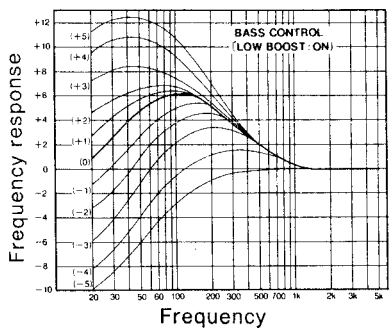
LEVEL:
Variable range +8 dB～−8 dB



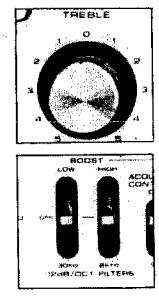
CHARACTERISTICS OF CHANGE: TONE CONTROLS (BASS㉖, TREBLE㉔) AND BOOST/FILTER SELECTORS㉓ COMBINED

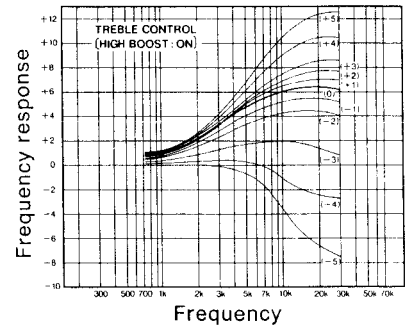
1) Bass control ㉖ & Low boost selector ㉓





2) Treble control ㉔ & High boost selector ㉓





TECHNICAL SPECIFICATIONS

POWER AMPLIFIER SECTION

Rated minimum sine wave RMS power output
20 Hz~20 kHz
both channels driven
0.03% total harmonic distortion
330W per channel (8 ohms)
330W per channel (4 ohms)

1 kHz continuous power output
both channels driven
0.03% total harmonic distortion
340W per channel (8 ohms)
360W per channel (4 ohms)

Total harmonic distortion
rated power 0.03% (20 Hz~20 kHz, 8/4 ohms)
half power 0.01% (20 Hz~20 kHz, 8 ohms)
0.02% (20Hz~20kHz, 4 ohms)
0.005% (1kHz, 8/4 ohms)

Inter-modulation distortion	0.03%
Frequency response	5 Hz~90 kHz, −1 dB
S/N (IHF, A)	115 dB
Residual hum and noise	0.3 mV
Damping factor	160 (8 ohms)
	80 (4 ohms)
Input sensitivity and impedance	1.5V/47 kilohms
Load impedance	
MAIN or REMOTE	4~16 ohms
MAIN + REMOTE	8~16 ohms

PREAMPLIFIER SECTION

Input sensitivity and impedance	
PHONO 1	2.5mV, 25k, 50k, 100 kilohms
PHONO 2	2.5mV, 25k, 50k, 100 kilohms
AUX	150mV, 47 kilohms
PLAYBACK TAPE 1	150mV, 47 kilohms
TAPE 2	180mV, 47 kilohms
REC/PLAY TAPE	180 mV 47 kilohms
Phono max. input voltage	300mV (1 kHz RMS)
S/N (IHF, A)	
PHONO	85 dB
AUX	100 dB
Frequency response	
PHONO	RIAA standard curve ±0.2 dB
AUX	20 Hz~20 kHz $^{+0}_{-0.3}$ dB
	5 Hz~40 kHz −1 dB
Tone controls	
BASS	50 Hz, + 10 dB~ −10 dB
TREBLE	20 kHz, + 10 dB~ −10 dB
MID	1 kHz, + 8 dB~ −8 dB
MID f_0	250 Hz~5 kHz
Low filter	30 Hz, −12 dB/oct.
High filter	8 kHz, −12 dB/oct.
Loudness switch (−30 dB)	50 Hz, +9 dB
Muting	−20 dB
Output voltage and impedance	
PRE OUT	rated 1.5V 100 ohms
	max. 3V 100 ohms
REC OUT TAPE 1, 2	150mV
REC/PLAY TAPE	30 mV/80 kilohms
Acoustic controls (Tone control: "0" position)	
LOW BOOST	100 Hz, +6 dB
HIGH BOOST	10 kHz, +6 dB

FM TUNER SECTION

Frequency range	88~108 MHz
Sensitivity	10.3 dBf (0.9 μV 75Ω IHF '58)
50 dB quieting sensitivity	
MONO	12.8 dBf (1.2 μV 75Ω IHF '58)
STEREO	36.2 dBf (17.7 μV 75Ω IHF '58)
Total harmonic distortion	
100 Hz	0.1% (MONO), 0.1% (STEREO)
1 kHz	0.1% (MONO), 0.1% (STEREO)
6 kHz	0.2% (MONO), 0.2% (STEREO)
S/N	83 dB (MONO), 80 dB (STEREO)
Frequency response	20 Hz~18 kHz, $^{+0.2}_{-0.8}$ dB
Alternate channel selectivity	85 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	100 dB
IF rejection at 98 MHz	120 dB
Spurious response rejection at 98 MHz	110 dB
AM suppression	60 dB
Stereo separation	50 dB (1 kHz), 40 dB (10 kHz)
Leak carrier	−70 dB (19 kHz), −70 dB (38 kHz)
Antenna terminals	75Ω F-type

AM TUNER SECTION

Frequency range	525~1605 kHz
Sensitivity	30 μV, 250 μV/m
Selectivity	35 dB
Image rejection at 1000 kHz	90 dB
IF rejection at 1000 kHz	80 dB

GENERAL

Power consumption	1600 W
	513 W (SA-1000A)
Power supply	50/60 Hz 110, 120, 220, 240 V
Dimensions (W × H × D)	630 × 191 × 536 mm
	24-13/16" × 7-17/32" × 21-3/32"
Weight	39.5 kg
	87.1 lb.

SA-1000/SA-1000A: Connections to other equipment

Record players 1 and 2.

- **Applicable cartridge types:** Moving-magnet, induced-magnet and high-output moving-coil cartridges.
- **Cartridge output voltage:** 1~10mV.

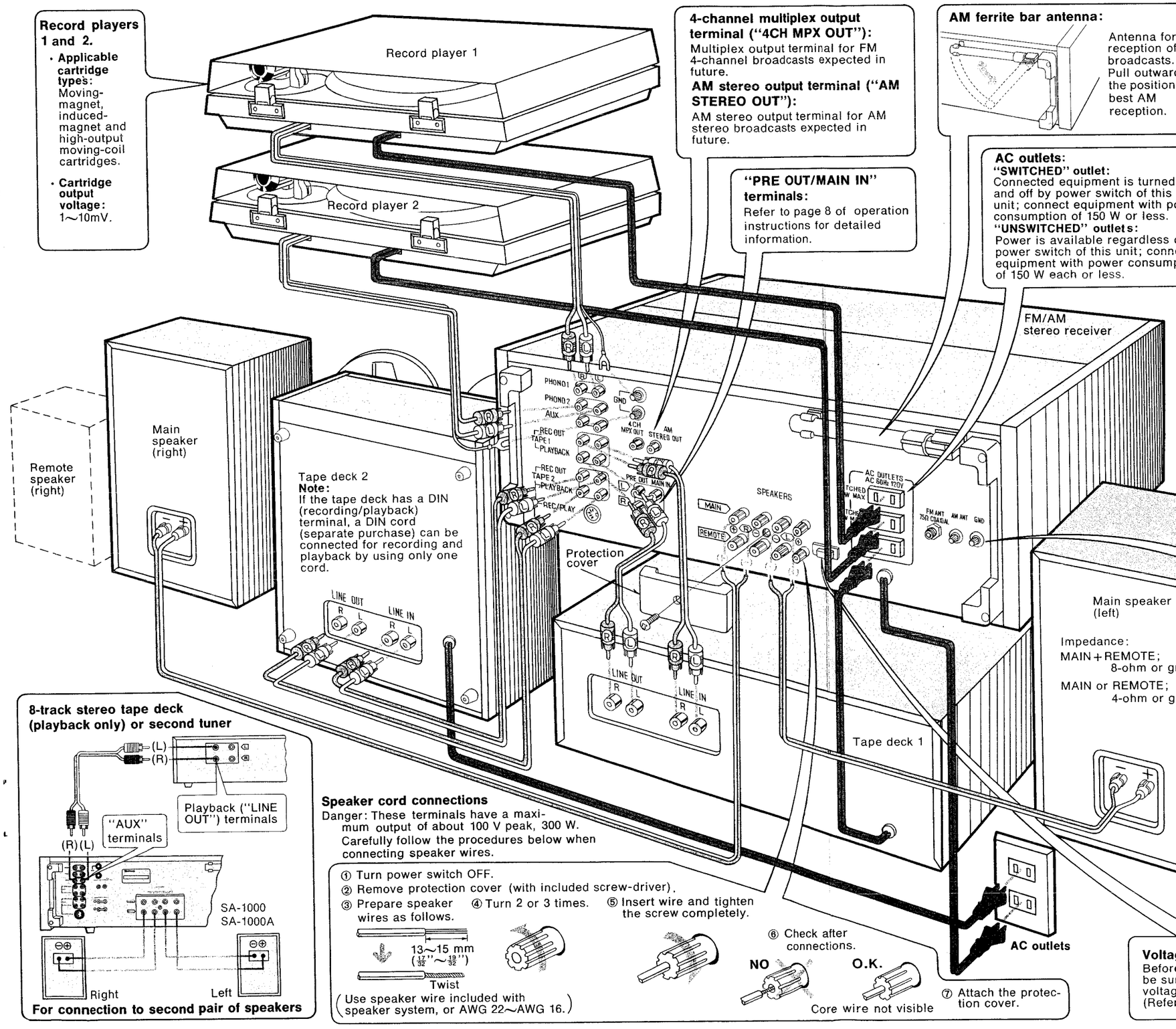
4-channel multiplex output terminal ("4CH MPX OUT"):
Multiplex output terminal for FM 4-channel broadcasts expected in future.

AM stereo output terminal ("AM STEREO OUT"):
AM stereo output terminal for AM stereo broadcasts expected in future.

"PRE OUT/MAIN IN" terminals:
Refer to page 8 of operation instructions for detailed information.

AM ferrite bar antenna:
Antenna for reception of AM broadcasts. Pull outward to the position of best AM reception.

AC outlets:
"SWITCHED" outlet:
Connected equipment is turned on and off by power switch of this unit; connect equipment with power consumption of 150 W or less.
"UNSWITCHED" outlets:
Power is available regardless of power switch of this unit; connect equipment with power consumption of 150 W each or less.



FM indoor antenna (Feeder antenna)
(included)

Secure the core wire with these screws.

Tape or tacks

- Unfold to T-shape, and attach to a wall (using cellophane tape or tacks) facing in direction of best reception.
- Tacks should not contact internal antenna wire.
- For best reception sound quality, an exclusive antenna especially for FM is recommended.

- Disconnect this antenna if special antenna for FM is installed.

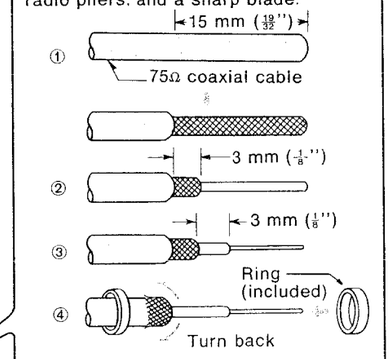
Impedance conversion plug (included)

or

Special antenna for FM reception
(Necessary in mountainous region, inside reinforced-concrete building, etc.)

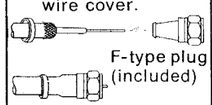
75Ω coaxial cable

Connection:
Prepare 5C-2V (or 3C-2V) coaxial cable, radio pliers, and a sharp blade.

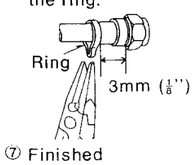


⑤ Use the F-type plug which corresponds with cable thickness. Fit the F-type plug onto the coaxial cable, inserting it between the mesh wire and the core wire cover.

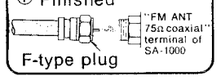
F-type plug

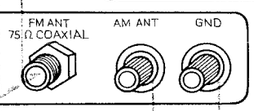


⑥ Use the radio pliers to crimp the ring.



⑦ Finished





F-type plug

Copper rod

Earth
(For improved AM broadcast reception sensitivity.)

5~12 meters (16~40 ft.)

Or use 5~12 m (16~40 ft.) of vinyl-covered wire horizontally at the window.

AM antenna
(Necessary in mountainous region, inside reinforced-building, etc.)

8-track stereo tape deck (playback only) or second tuner

For connection to second pair of speakers

Speaker cord connections
Danger: These terminals have a maximum output of about 100 V peak, 300 W. Carefully follow the procedures below when connecting speaker wires.

① Turn power switch OFF.
② Remove protection cover (with included screw-driver).
③ Prepare speaker wires as follows.
④ Turn 2 or 3 times.
⑤ Insert wire and tighten the screw completely.

(Use speaker wire included with speaker system, or AWG 22~AWG 16.)

⑥ Check after connections.

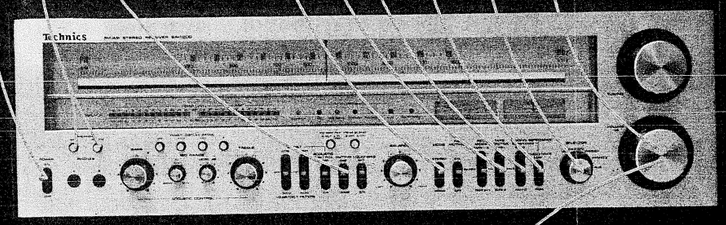
⑦ Attach the protection cover.

Voltage selector
Before using this unit, be sure to set to correct voltage.
(Refer to page 1)

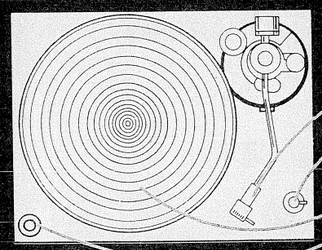
Printed in Japan F0378T0 SQX50163

SA-1000/SA-1000A Operation (Follow all steps in numbered order.)

To listen to phono discs



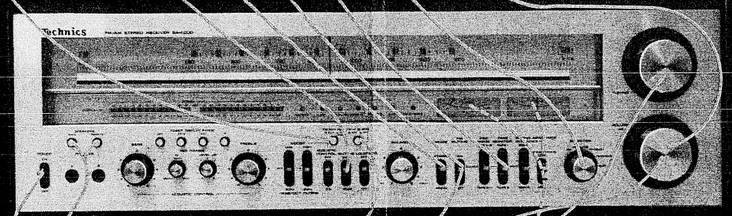
6 **"STEREO"** position.
5 **"SOURCE"** position.
4 Set to value corresponding to specified resistance of cartridge.
3 To change cartridge capacitance (as described).
2 **"PHONO 1" or "PHONO 2"** position. (Refer to note 2.)
1 (↶) "∞" position. (Refer to note 1.)
9 **"ON"** position.
8 Push (▟▙⟷▟▙) **"MAIN" or "REMOTE".** (Refer to note 3.)
7 **"0 dB"** position.
14 Adjust volume level (↶).



13 **Pick-up:** Place pick-up on disc surface; performance will begin.
12 **Speed selector:** Select speed.
11 **Phono disc:** Place disc on turntable.
10 **Power switch:** "ON" position.

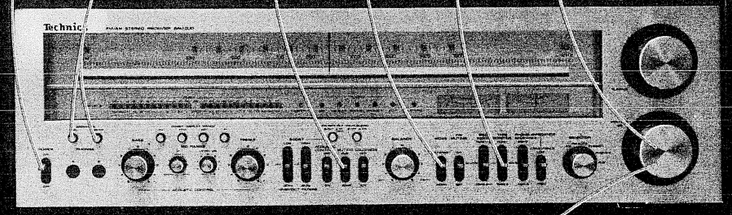
(Steps ⑩～⑬ may differ depending upon type of record player.)

To listen to radio broadcasts

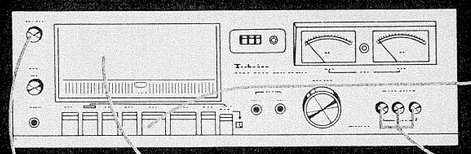


6 **"0 dB"** position.
5 **"STEREO"** position.
4 **"ON"** position. (During FM broadcast reception only.)
3 **"SOURCE"** position.
2 • Set to **"FM AUTO"** for FM broadcasts.
• Set to **"AM"** for AM broadcasts.
1 Set volume control to low position (↶) "∞→36" for easier tuning.
7 **"OUT"** position. (▟▙⟷▟▙)
8 Push (▟▙⟷▟▙) **"MAIN" or "REMOTE".** (Refer to note 3.)
9 **"ON"** position.
10 Tune to radio broadcast (↷).
• Signal-strength meter: Best reception is at point where indication needle is farthest to right.
• Tuning meter: Then best FM reception (least distortion) is at point where indication needle is at center.
11 Adjust volume level (↷).
12 Set to "OFF" if FM signals are difficult to receive (mountainous region, etc.)
13 Set to (▟▙⟷▟▙) "ON" if noise is excessive in high sound range of FM stereo broadcasts.

To listen to tape



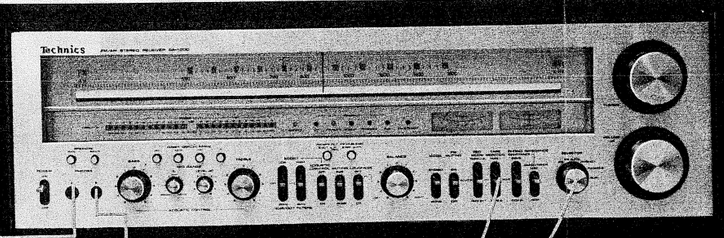
6 **"ON"** position.
5 Push (▟▙⟷▟▙) **"MAIN" or "REMOTE".** (Refer to note 3.)
4 **"0 dB"** position.
3 **"STEREO"** position.
2 **"TAPE 1" or "TAPE 2"** position. (Refer to note 4.)
1 (↶) "∞" position. (Refer to note 1.)
11 Adjust volume level (↶).



10 **Playback button:** Push playback button down; performance will begin.
9 **Tape selector:** Set tape selector to type of tape being used.
7 **Power switch:** "ON" position.
8 **Cassette tape:** Insert cassette (with side to be played (A or B) upward).

(Steps ⑦～⑩ may differ depending upon type of cassette tape deck.)

- To listen through headphones
- To use equipment connected to "AUX" terminals



Headphones A Headphones B

Release speaker selectors (▟▙⟷▟▙) to off position when speaker sound is not wanted.

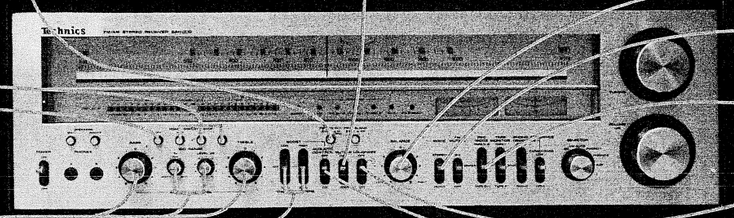
When listening through headphones

1 **"AUX"** position.
2 **"SOURCE"** position.
3 • If a stereo tuner is connected to "AUX" terminals on rear panel, operate in same way as described in the section "To listen to radio broadcasts."
• If a tape deck is connected to "AUX" terminals on rear panel, operate in same way as described in the section "To listen to tape."

To use equipment connected to "AUX" terminals

Steps required for all operations

(Follow these steps, as necessary, for all operations after adjustment of volume level.)



When output level is low, push(▟▙⟷▟▙) "X0.1" or "X0.01" power display range selector for an output level indication by the power indicators 10 or 100 times higher.

Turn the power display indicators on or off, as desired.

Adjust tone quality as desired. Low-range sound is adjusted with bass control ("BASS"), mid-range sound with mid-range control ("MID RANGE"), and high-range sound with treble control ("TREBLE").

Use only for recording. (Refer to page 5.)

Set to "−20 dB" to decrease volume quickly.

For immediate emphasis of treble and bass, set both to "BOOST" position. To eliminate phono motor rumble and other low-range noise, set left one to "30 Hz" position. To eliminate noise caused by dust on disc, and other high-range noise, set right one to "8 kHz" position.

When set to "OFF", characteristics will be "flat" regardless of setting of tone controls and boost/filter selectors. (Note: No effect upon filter function of boost/filter selectors at either position.)

Adjust left/right volume balance.

Set to "MONO" to adjust left/right volume balance or to listen monaurally.

Use only for recording. (Refer to page 9.)

Set to "ON" when listening at low volume level.

After performance is finished, power switches of all equipment should be turned "OFF".

Notes:

1. Speakers may be damaged if not set to "∞" position when power is turned on, because of high input.
2. Set to "PHONO 1" to listen through record player connected to "PHONO 1" terminals on rear panel.
3. Push "MAIN" button (▟▙⟷▟▙) to listen through speakers connected to "MAIN" terminals on rear panel.
4. Set to "TAPE 1" to playback sound from tape deck connected to "TAPE 1" terminals.

SA-1000A is different in appearance and colour-tone.